

# GEL ELECTROPHORESIS

## Aim

To visualize or separate DNA fragments according to their size using gel electrophoresis.

## Procedure

1. Prepare agarose 1 % solution by weighing 1 g of agarose into 100 ml TAE 1X buffer. Microwave mixture until the agarose powder has dissolved entirely.
2. Once the gel solution has cooled down to 50-60°C, add 10  $\mu$ l of Gel Red solution 10'000X.
3. Cast the agarose gel on a cast and place the comb on the top part of the gel. Let the gel solidify at room temperature for 20-30 min. Then place the gel onto the electrophoresis apparatus ensuring that it is submerged in TAE 1X buffer.
4. Meanwhile, prepare DNA samples by adding 5X loading dye solution into the DNA samples (1  $\mu$ l of loading dye into 4  $\mu$ l of DNA sample).
5. Carefully load each DNA sample into designated wells. To determine the DNA sizes on the gel, also load a DNA Ladder on one of the wells.
6. Run an electric current of 110 V for 30 minutes. If the DNA bands have not separated completely, run the gel a for a few more minutes.
7. Visualize gel using a gel reader or under UV light.

## Sources

<https://www.addgene.org/plasmid-protocols/gel-electrophoresis/> (retrieved 04.10.2016)

<http://www.jove.com/video/3923/agarose-gel-electrophoresis-for-the-separation-of-dna-fragments> (retrieved 04.10.2016)